WHAT IS CLAIMED IS:

1. A ground fault detection circuit detecting whether a power output node of a switching regulator located between a power transistor and an inductor is grounded, comprising:

a current supply circuit supplying said power output node with a pulsed current continuously; and

a determination circuit determining from a potential of said power output node whether said power output node is grounded.

2. The ground fault detection circuit according to claim 1, wherein said current supply circuit includes:

a transistor having a first electrode receiving a power supply potential and a gate electrode receiving a clock signal;

a resistor having one electrode connected to a second electrode of said transistor; and

a first diode having an anode connected to the other electrode of said resistor, and a cathode connected to said power output node.

3. The ground fault detection circuit according to claim 1, wherein said determination circuit includes:

a potential detection circuit having an input node connected to said power output node, outputting a signal of a first logical level for a potential of said input node lower than a predetermined potential, and outputting a signal of a second logical level for a potential of said input node higher than the predetermined potential; and

a flip-flop set in response to said potential detection circuit outputting said signal of said second logical level to output a signal indicating that said power output node is not grounded.

4. The ground fault detection circuit according to claim 3, further comprising a second diode having an anode connected to said input node of said potential detection circuit, and a cathode connected to said power

output node.

5. The ground fault detection circuit according to claim 4, further comprising a constant current circuit supplying said anode of said second diode with a predetermined current.

6. The ground fault detection circuit according to claim 3, wherein said current supply circuit stops supply of the pulsed current in response to said flip-flop outputting the signal indicating that said power output node is not grounded.